

LC3 ML Cheat Sheet

ADD	0001 + DR 3 + SR1 3 + 000 + SR2 3
ADD	0001 + DR 3 + SR1 3 + 1 + IMM 5
AND	0101 + DR 3 + SR1 3 + 000 + SR2 3
AND	0101 + DR 3 + SR1 3 + 1 + IMM 5
NOT	1001 + DR 3 + SR 3 + 1 + 1111
BR	0000 + nzp 3 + PCoffset 9
JMP	1100 + 000 + BR + 000000
RET	1100 + 000 + 111 + 000000
JSR	0100 + 1 + PCoffset 11
JSRR	0100 + 000 + BR + 000000
LD	0010 + DR 3 + PCoffset 9
LDI	1010 + DR 3 + PCoffset 9
LDR	0110 + DR 3 + BR + offset 6
LEA	1110 + DR 3 + PCoffset 9
RTI	1000 + 000000000000
ST	0011 + SR 3 + PCoffset 9
STI	1011 + SR 3 + PCoffset 9
STR	0111 + SR 3 + BR + offset 6
TRAP	1111 + 0000 + trapvect 8
Unused	1101

Service

Trap Vector

x20	GETC	get single ASCII, not echoed, store in R0
x21	OUT	write ASCII in R0 to console
x22	PUTS	write string to console, base address in R0 , one ASCII per byte
x23	IN	Prompt for single ASCII stored in R0 and ec hoed
x24	PUTSP	write string to console, base address in R0 , two ASCII per byte
x25	HALT	

Device Register Address

xFE00	KSR	bit[15] indicates if keyboard has received a new character
xFE02	KDR	bits[7:0] contain the latest inputted chara ctet
xFE04	DSR	bit[15] indicates if the display is ready
xFE06	DDR	bits[7:0] contain the character to be displ ayed
xFFFE	MCR	b[15] is clock enable bit